ARTIS
Autonomous Rail-Guided Tank Inspection System

Evaluation and Demonstration of Robotic Solutions for the Inspection and Maintenance of Ballast Water Tanks on Ships

The robotic system ARTIS was developed as a demonstrator in the context of the international research project “RObots in Tanks”, which contributes to the development and integration of new maintenance and inspection processes in narrow, difficult-to-access, dirty, and complex closed spaces, such as ballast water tanks (BWTs) in ships.

Design parameters:
Control: Fully autonomous
Locomotion: 3D rail guided
Length: 693 mm
Width: 244 mm
Height: 293 mm
Approx. Weight: 9 kg
Max. Speed: 0.52 m/s
Est. Power Consumption: 49W
Power Supply: 25.6 V 5000 mAh LiPo Battery
Est. operation period: 2.9 h

Drivetrain
Motor type: Brushed DC
Motor torque: 110 mNm
Gear: Planetary 36:1
Torque @ rail: 198 Nm

Designated sensors
High-Res Cam: Prosilica GC2450C
2448 x 2050 px
15 Hz

IMU: Xsens Mti
Oxygen Monitor
Thickness measurement: ATP TE 1250-FN

Partners:

Contact:
DFKI Bremen & University of Bremen
Robotics Innovation Center
Director: Prof. Dr. Frank Kirchner
E-mail: robotics@dfki.de
Website: www.dfki.de/robotics

Supported by:

Universität Bremen